

REMARKS

Applicants have studied the Final Office Action of March 22, 2007, and take this opportunity to present arguments in support of patentability. It is believed that upon objective review of the claims, and particularly analyzing this information at the time the invention was made, that it will be clear that the claims define over any fair teaching attributable to the prior art.

Applicants believe that this application is now in condition for allowance and early notice thereof is respectfully requested.

I. Allowable Subject Matter

Claims 23 and 24 were allowed, which is gratefully acknowledged. The Examiner provided the following statement of reasons for the indication of allowable subject matter:

... the inclusion of the limitation of the cylindrical neck extends inwardly of the chamber from the top wall and is surrounded by a peripheral recess, whereby the outer end of the neck is adjacent to the outer side of the top wall. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

II. 35 U.S.C. §103(a) Rejections

Claim 22 was rejected under 35 U.S.C. §103(a) as being unpatentable over Amberntsson et al. (U.S. Patent No. 3,953,862) in view of Thomas (U.S. Patent No. 4,463,362).

With respect to amended claim 22, Applicants submit that the subject matter differs from Amberntsson in view of Thomas. Claim 22, as amended, calls for, in pertinent part, a top wall of an ink cartridge housing including a cylindrical neck having an upper, outer end. A vent opening extends through the top wall cylindrical neck. The vent is a porous member which rests on the upper, outer end of the cylindrical neck to cover the vent opening.

Amberntsson discloses a printing head 11 and a liquid reservoir 12. A top wall of the reservoir is provided with a threaded opening 31 through which printing liquid 24 is supplied to the reservoir. A separate plug 32, which is threaded into the opening 31,

has an air inlet channel 33. The bottom of the plug includes a countersunk bore 32a having a filter 34 therein. The filter is formed of a non-wetting material which has a multiplicity of narrow channels. Air passing through the channel 33 into the reservoir has to pass through the filter 34. Because the non-wetting filter material is located at an inner end of the plug, the liquid cannot pass through the filter channels to the air inlet channel 33 but air can pass the other way through the filter 34 without any blockage. This prevents liquid from leaking out through the channel 33. (See col. 2, lines 14-30).

Applicants submit that Amberntsson fails to teach a top wall including a cylindrical neck having an upper, outer end. The Office Action identifies the plug 32 as being the claimed top wall cylindrical neck having an upper, outer end (see Figure 2 of Amberntsson reproduced on page 3 of the Office Action). However, the plug 32 is not a portion of the top wall but is separate component which is threaded into the top wall opening 31. The Office Action also concedes that Amberntsson fails to teach a vent being a porous member resting on the upper, outer end to cover the opening (see Office Action page 3). For that limitation, the Office Action relies on the teaching of Thomas.

Thomas teaches a secondary reservoir 24 of an ink supply system. As shown in Figure 1 of Thomas, the reservoir has a filter-type vent 26 disposed in the top for access to the atmosphere. The filter-type vent allows equalizing of pressure between the reservoir and the atmosphere over an extended period of time, prevents entry of dust or foreign particles into the reservoir, and reduces evaporation of any water or like constituent of the ink from the reservoir.

Applicants submit that Thomas fails to teach that the filter located in the vent 26 is a porous member. Should the Examiner contend otherwise, Applicants respectfully request that the Examiner explicitly cite the paragraph(s) from Thomas which state that vent filter is a porous member. Applicants submit that the filter can be a non-wetting filter similar to the filter of Amberntsson. Thomas also fails to teach a porous member resting on the upper, outer end of a top wall cylindrical member to cover a vent opening. Rather, as shown in Figure 1 of Thomas, the filter is located in a counterbore formed on an upper end of the vent 26, not on the upper, outer end of the vent.

Further, Thomas teaches away from Amberntsson by locating the filter above the opening of the vent 26, which allows ink in the ink reservoir 24 to flow into the vent

opening. Conversely, Amberntsson positions its filter at an inner end of the threaded plug 32 below the plug channel 33 to prevent liquid 24 in the ink reservoir 12 from leaking into and out through the channel. (See col. 2, lines 27-30).

Accordingly, it is respectfully submitted that claim 22, as amended, now defines over the art of record and is in condition for allowance.

Claim 25 was rejected under 35 U.S.C. §103(a) as being unpatentable over Wenzel (U.S. Patent No. 5,700,315) in view of Askren et al. (U.S. Patent Publication No. 2002/0097283) and Usui et al (U.S. Patent No. 6,536,861).

With respect to amended claim 25, Applicants submit that the subject matter differs from Wenzel in view of Askren and Usui.

Wenzel was deemed to disclose a housing having a top wall (80), a bottom wall (32) and side walls (20, 22) forming a chamber for receiving ink, an outlet passage (52) through the bottom wall for dispensing ink from the chamber, and a vent (84) including an opening through the top wall for venting air into the chamber from atmosphere (Figure 1).

The Office Action concedes that Wenzel fails to teach the vent being a diaphragm mounted on the top wall and having a flexible portion overlying the opening through the top wall on the inner side thereof (see Office Action page 4). For that limitation, the Office Action relies on the teaching of Askren. The Office Action also concedes that Wenzel fails to teach the diaphragm having a second portion extending through the opening which secures the diaphragm to the housing (see Office Action page 4). For that limitation, the Office Action relies on the teaching of Usui.

Askren was deemed to disclose a vent (62) being a diaphragm (66) mounted on the top wall and having a flexible portion overlying the opening through the top wall on the inner side thereof. The Examiner concluded that it would have been obvious to incorporate the teaching of vent being a diaphragm mounted on the top wall and having a flexible portion overlying the opening through the top wall on the inner side thereof as taught by Askren into the device of Wenzel.

Applicants submit that Askren discloses a sensor 30 located on a base assembly 22 of an ink cartridge 20. The base assembly forms an ink reservoir 32 that can receive ink for first and second ink tanks 24, 26. As shown in Figure 4 of Askren, the ink

reservoir includes a fourth ink port 40 located on a sidewall of the reservoir 32 (a printhead nozzle plate 28 being located on a bottom wall of the reservoir). The sensor 30 is coupled in fluid communication with the fourth port 40 to detect a pressure change in the ink reservoir. As shown in Figure 7 of Askren, the sensor 30 includes a housing 60 having a vent 62 and a sensor port 64. Contained in the housing is a deformable diaphragm 66 having a conductive surface 68. Also, positioned in the housing in close proximity to the conductive surface is a pair of electrical contacts 70, 72. One side of the diaphragm 66 is exposed to ambient air via vent 62, and the other side of diaphragm is exposed to ink in the ink reservoir 32 via the fourth port 40 and sensor port 64. (See ¶ [0038], page 3).

Applicants submit that the vent 62 of Asken is not a diaphragm for venting air into said chamber from atmosphere because the diaphragm 66 of Asken does not allow air into the ink reservoir. Rather, the diaphragm is in selective engagement with the electrical contacts 70, 72 to convey a warning message to a user via a communication link 74 and warning unit 76. (See ¶ [0040], page 3). Thus, Applicants submit that Wenzel in combination with Askren do not teach or suggest a vent being diaphragm mounted on the top wall and having a flexible portion overlying the opening through the top wall on the inner side thereof.

Claim 25, as amended, also calls for, in pertinent part, the vent being a diaphragm mounted on the top wall and having a flexible portion in selective engagement with at least one protrusion extending inwardly from the top wall. Applicants submit that Wenzel in view of Askren and Usui fails to teach a diaphragm flexible portion in selective engagement with at least one protrusion extending inwardly from a top wall of an ink cartridge housing.

Merely because claim elements are individually found in the prior art, it does not necessarily find that it would have been obvious to combine the elements from different prior art references. Accordingly, amended claim 25 is in condition for allowance over the prior art of record.

CONCLUSION

Applicants respectfully submit that the present Amendment removes issue for appeal, or in some other way, requires only a cursory review by the Examiner. The claims as amended do not raise any issues with regard to new matter, do not present new issues requiring further search or consideration and/or place the application into better for appeal. Accordingly, the amendment should be entered and the application forwarded for issuance.

For the reasons detailed above, it is respectfully submitted that all claims remaining in the application (Claims 22-25) are now in condition for allowance.

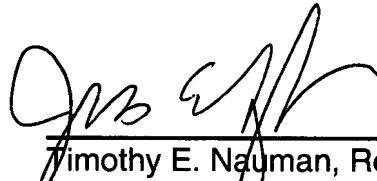
No additional fee is believed to be required for this Amendment. If, however, a fee is due, the Commissioner is authorized to charge our Deposit Account No. 06-0308.

In the event the Examiner believes a telephone call would expedite prosecution, he is invited to call the undersigned.

Respectfully submitted,

FAY SHARPE LLP

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